CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

TENTATIVE ORDER

SITE CLEANUP REQUIREMENTS AND CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION FOR:

CHEVRON PRODUCTS COMPANY

CASTRO COVE SEDIMENT REMEDIATION PROJECT

Offshore of:
CHEVRON REFINERY
RICHMOND, CA 94801
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Water Board), finds that:

1. SITE DESCRIPTION

Site Location/Ownership: The Castro Cove Site, also known as South Castro Cove and hereafter referred to as the Cove, is located adjacent to the Chevron Refinery in Richmond. Castro Cove is a shallow, protected embayment of San Pablo Bay (Figure 1). The western boundary of the Cove consists of rubblemound seawalls and dikes containing a lagoon and the Chevron yacht harbor. A dike built to contain the refinery's former No. 1 Oxidation Pond forms the southeastern boundary. Salt marshes and rubblemound seawalls adjacent to the West Contra Costa Sanitary Landfill form the eastern shoreline of the Cove (Figure 2). Chevron Products Company leases use of Castro Cove from the State Lands Commission.

Site History: Maps from the mid-1800s show Castro Cove as an extended creek and estuary system. At that time, the Castro Creek channel turned southwest near the location of the current salt marsh and followed the Cove shoreline westward. The mouth of the channel was near the current Chevron yacht harbor.

Historically, a number of industrial, commercial, and municipal operations have discharged wastewater and stormwater runoff into the Cove, and the creeks running into the Cove. These activities (including dredging, urban runoff, sanitary, and other discharges) have impacted the Cove environment. Ongoing nonpoint sources (e.g., urban runoff) into Castro Cove are likely to continue into the future.

In 1902, a predecessor of Standard Oil Company began refinery operations adjacent to the Cove.

Standard Oil Company discharged process water into the south side of Castro Cove at two locations. Discharge from the outfalls ceased in 1971 when all wastewater was rerouted to a treatment system that discharged into the Cove via an impoundment known as the 250-Foot Channel. After implementation of the Clean Water Act in 1972, all process water was biologically treated prior to being discharged. Discharge of treated effluent to Castro Cove ended in 1987, when all discharge water was rerouted to the Deep Water Outfall offshore of Point San Pablo, outside Castro Cove.

Adjacent Properties: Castro Cove is bordered to the north by San Pablo Bay, to the east by West Contra Costa County Sanitary Landfill and Wildcat Creek Salt Marsh, and to the south and west by the Chevron Products Company refinery.

2. PURPOSE OF ORDER

This Order serves as both Site Cleanup Requirements and Water Quality Certification under Section 401 of the Federal Clean Water Act for remediation of sediment contamination in a portion of Castro Cove that poses unacceptable risk to ecological receptors (sediment-dwelling benthic invertebrates).

3. REGIONAL AND SITE HYDROGEOLOGY

Castro Cove sediments consist primarily of silts and clays with some fine sand. Sandy material represents a higher percentage of sediments in Castro Creek channels than it does in the Cove. The processes influencing Cove hydrodynamics (i.e., flushing and deposition) potentially minimize adverse impacts from chemical exposure because of natural attenuation (i.e., biodegradation, dispersion, and dilution) and reduced bioavailability as cleaner sediments are deposited over chemically impacted areas.

Water movement in the Cove is dominated by tidal action. Tides in San Pablo Bay are semi-diurnal mixed tides (two high and two low tides each day with a significant difference in tidal range between the two tides). The National Oceanic and Atmospheric Administration (NOAA) tide station nearest to the site is at Point Orient, located 0.75 miles to the west of Castro Cove. Average tides at Point Orient have a mean higher high water (MHHW) level of 5.8 feet, and a mean range of 4.1 feet (NOAA datum is mean lower low water [MLLW], which is 0.0 feet by definition). Most of the Cove is exposed mudflat at MLLW. During the higher spring tides, which occur every two weeks, the Cove flushes completely on the outgoing ebb tides. During low neap tides, less ebb tide flushing occurs.

The flow in San Pablo Bay, and hence Castro Cove, is seasonally influenced by winter runoff from the Napa and Sacramento/San Joaquin Rivers. Winter runoff brings in large quantities of sediment, some of which is initially deposited in San Pablo Bay during this period. During spring tides that occur after winter runoff, flushing of the Cove may resuspend some surficial sediments. Over the rest of the year, tidal and wave action separate the sediments, with heavier, coarser material remaining in higher energy areas of the Bay, and finer material deposited in more sheltered areas such as coves and marshes.

Radioisotope dating and bathymetric surveys indicate most of Castro Cove is accreting sediment at a rate of 0.4 to 0.5 inches per year. In historically dredged areas, higher accretion rates of 3 to 4 inches per year have been measured.

4. NAMED DISCHARGER

Polycyclic aromatic hydrocarbons (PAHs) have been measured at elevated levels in sediment in Castro Cove. Chevron Products Company owns and operates a petroleum refining operation adjacent to the Cove and historically discharged to the Cove. Chevron Products Company is considered to be the sole discharger for purposes of this Order.

5. REGULATORY BACKGROUND

In June 1998, the Water Board requested Chevron Products Company to prepare a Sediment Characterization Workplan for Castro Cove. The request was based on the identification of between 10 and 100 acres of Castro Cove as a candidate toxic hot spot under the Bay Protection and Toxic Cleanup Program. In response to the request, a combined sediment sampling and tiered ecological risk assessment methodology was developed. In 2002, Castro Cove was added to the state's CWA section 303(d) list of impaired waters, based on the presence of dieldrin, mercury, PAHs and selenium in sediment. The site was assigned a low priority for TMDL development.

A Tier I field investigation was performed in December 1998 and Tier II investigations including sediment analysis, toxicity testing using amphipod bioassays, and radioisotope dating of sediments were performed between September 1999 and June 2001. As discussed in Finding 6, an Area of Concern was delineated based on the PAH and mercury data, as well as benthic toxicity test results.

6. AREA OF CONCERN (AOC)

Castro Cove consists of three general types of habitats: salt marsh, open water, and exposed mudflat. Castro Creek enters the southeastern portion of Castro Cove, where a small salt marsh peninsula habitat separates the Cove from the Creek (Figure 2). The Creek Channel is 1 to 2 feet deeper than the surrounding mudflats and trends northward along the eastern side of the Cove. The channel drains during low tide and is largely mudflat habitat. The area east of the salt marsh is open-water habitat during high tide, and drains to become mudflats during low tide.

The Tier I Ecological Risk Assessment (ERA) investigation identified chemicals of potential concern (COPCs), exposure pathways, and quantified risks to habitats and species. This assessment indicated that two areas required further characterization: the Mudflat Area and the Creek Channel Area. In September 1999, an initial Tier II ERA investigation was performed to delineate the extent of contamination, evaluate the effects of residual petroleum in the bioavailable layer, and further evaluate sediment accretion rates via radioisotope dating. A supplemental Tier IIB investigation was performed in 2000 to address the potential for adverse impacts resulting from exposure to chemicals in sediments in a third area, the Salt Marsh Area. The Mudflat Area and a few additional locations were further characterized in a Tier IIC investigation in June 2001 using benthic toxicity and analytical chemistry data.

Contaminants of Concern: Based on the results of the tiered ecological risk studies, total polycyclic aromatic hydrocarbons (total PAHs) and mercury have been identified as the primary chemicals of ecological concern. Although the State Water Resources Control Board cited elevated levels of dieldrin and selenium in sediment, in addition to PAHs and mercury, as the basis for including Castro Cove in the 2002 revisions to the 303(d) list for water bodies in the San Francisco Bay Region, the Tier I and Tier II investigations found dieldrin and selenium at concentrations below ecological screening benchmarks, and therefore, these chemicals were not retained as contaminants of concern.

Delineation of AOC: Interpolation of the PAH, mercury, and toxicity data from the tiered risk assessments was used to delineate an area of concern from the initial investigation area (Figure 3). Based on sediment accretion measurements, the sediments below the two-foot depth date from 1900 or earlier, predating industrial activity in the Cove. A 20-acre portion of the Mudflat Area was delineated where the upper 2 feet of sediments were most impacted by contamination from chemicals of potential concern. This area contains the data points at which amphipod bioassays showed toxicity, and PAH and mercury concentrations above screening benchmarks (Table 1).

Table 1. Summary of Contaminant Concentrations in Castro Cove Sediment 1999-2002

Contaminant	Unit	Maximum Sediment Concentration (surface to 2-foot depth)	Screening Ecological Benchmark	San Pablo Bay Ambient/Reference Sediment Concentration[1]	Estimated Concentration in Exposed Surface Sediment After Cleanup[2]
Total PAHs	mg/kg dry wt	507	4.90[3]	3.99	1.22
Mercury	mg/kg dry wt	13	0.71[4]	0.34	0.41

1 95% Upper Confidence Limit (UCL) on the mean of San Francisco Estuary Regional Monitoring Program sediment chemistry data collected from San Pablo Bay sampling station BD22 between 1993 and 2001.

2 95% UCL on the mean of chemistry data from sediments at a depth of 2.5 to 3 feet below the AOC which will become surface sediments after corrective action.

3 Calculated from the Threshold Effects Concentration (TEC) of 290 mg total PAH/kg organic carbon in sediment, using a total organic carbon concentration (TOC) for Castro Cove sediments of 1.7% (mean TOC for 70 sediment samples) from: Swartz, R.C., 1999. Consensus Sediment Quality Guidelines for Polycyclic Aromatic Hydrocarbon Mixtures. *Envrion. Toxicol.. And Chem*. 18:780-787.

4 NOAA Effects Range Median (ERM) from: Long, E.R., D.D. MacDonald, S.L. Smith, and F.D. Calder. 1995. Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. *Env. Manage*. 19(1):81-97

7. CORRECTIVE ACTION PLAN

A Corrective Action Plan (CAP) was developed for the AOC and submitted to the Water Board in June 2002. An addendum to the CAP was submitted on August 2, 2006. The CAP includes an initial screening of technologies to identify alternatives that could effectively achieve the remediation goal of restoring biological viability to the site. The technologies considered included four general categories: natural accretion of sediments over AOC (no action), in-situ treatment, in-situ containment, and removal and disposal of impacted sediments.

Eight corrective action alternatives were evaluated in terms of effectiveness, implementability, cost, and compatibility with other local Chevron Products Company remediation projects. Based on the alternatives evaluation, the following proposed action was recommended:

- Removal of contaminated Castro Cove sediments in the AOC to a depth of two feet.
- Disposal of the sediments in a suitably contained manner either at a local Chevron Products Company facility or at an approved landfill.

- Natural accretion in the excavation with a protective sand layer to resist shoreline erosion.

Sediment Removal from AOC: Sediment removal would be achieved by hydraulically dredging the area while it is isolated from the rest of San Pablo Bay within a sealed sheetpile enclosure that would be in place for approximately nine months. To ensure that the upper 2-ft layer of sediments is removed and that the biological viability of the Castro Cove is restored, the project would hydraulically dredge the uppermost 2.5 feet of sediments from the area.

In an approximately 1.5-acre area in the southwest corner of the AOC where contaminants are found slightly deeper than two feet, sediments would be excavated to a depth of three feet and the area would be capped. Excavation below three feet in this area is complicated by the fact that the area is adjacent to a levee-supported gravel road, which separates Castro Cove from the North Yard Impound Basin. This levee has a history of subsidence. Excavation deeper than three feet at the toe of the levee would create safety concerns due to the levee's instability. To safely complete the project and to ensure environmental protection in this area, excavated sediments in the 1.5-acre area would be replaced with an engineered cap consisting of a geotextile layer and three feet of clean Bay Mud/silt with a density similar to the removed sediments.

Exposed Sediment Sampling Study: During the preparation of the initial CAP in 2002, Chevron Products Company conducted a study to confirm that contaminant levels in sediments left exposed after cleanup would not pose unacceptable risk to ecological receptors. Sediment core samples were collected from 20 locations in the AOC (one per acre, equivalent to sampling on 200 foot centers) and from six locations just outside the AOC to fill data gaps at the boundary. All cores from the AOC were subsampled and analyzed for an expanded suite of contaminants (PAHs, TPH, pesticides, and metals) from 2.5- to 3.0-ft depths (the exposed depth allowing for a 6- to 12-inch over-dredge) and from 3.0-to 4.0-ft depths if near areas of elevated PAH and mercury concentrations identified in previous studies. The post-cleanup exposed sediment study results indicate that PAH and mercury concentrations in surface sediments exposed after cleanup will be equivalent to ambient concentrations in San Pablo Bay (representative of the least-impacted portions of the Bay) and less than ecological benchmarks (Table 1). Task 3 of this Order requires the submittal of a post-dredging confirmation monitoring plan to demonstrate that the cleanup reduced PAH and mercury concentrations in sediment to the levels indicated by the exposed sediment study.

Disposal of Castro Cove Sediment and Final Closure of Passes 2-5 of the No. 1 Oxidation Pond: The 2006 CAP Addendum identified a 66 acre portion (Passes 2 through 5) of the No. 1 Oxidation Pond located in the Chevron Richmond Refinery adjacent to Castro Cove as the preferred location for disposal of Castro Cove sediments. The No. 1 Oxidation Pond is a former refinery effluent treatment unit that was taken out of service in 1990. In that same year, Pass 1, now known as the North Yard Impound Basin, was clean-closed (petroleum-contaminated soil was removed and relocated to Passes 2 through 5), and is currently used as a stormwater retention basin. Passes 2 through 5 are subject to Water Board Order No. 00-043 which requires development of a Corrective Action Plan (CAP) to address a 5.5 foot thick layer of soft, petroleum-contaminated soil overlying a 25 foot thick layer of low permeability Bay Mud. In 2004, the Water Board

approved an interim closure plan consisting of drainage improvements and mitigation of potential hazards for ecological receptors. At the time, staff recognized that additional corrective actions and/or final closure of the No 1 Oxidation Pond may be warranted in the future.

As part of the Castro Cove CAP, Chevron Products Company has proposed placing approximately 80,000 cubic yards (cy) of non-hazardous sediment dredged from Castro Cove in Passes 2 through 5 of the No. 1 Oxidation Pond. After the dredged sediment has sufficiently dried, up to 60,000 cy of stockpiled non-hazardous upland soil from refinery construction projects would be mixed with the Cove sediment and a structural stabilization material such as cement or fly ash. Bench-scale stabilization tests will be performed to determine the most effective stabilization material and application rate. This material mixture is intended to provide a structurally stable, protective cap over the remaining oily pond sediments. After settling and consolidation, the surface of the cap will be graded to promote drainage and prevent ponding, covered with a layer of non-hazardous soil acceptable for surface use pursuant to the refinery Soil Management Plan required by Order No. 00-043, and seeded with upland vegetation. Capping Passes 2 through 5 of the No. 1 Oxidation Pond in this manner will constitute the overall final closure of this former waste treatment unit.

Task 1 of this Order requires the submittal of a detailed final corrective action design plan for remediation of contaminated sediment in Castro Cove and final closure of Passes 2 through 5 of the No. 1 Oxidation Pond.

8. DECANT WATER MANAGEMENT

Sediment from Castro Cove would be hydraulically delivered (pumped) to the No. 1 Oxidation Pond via pipeline as a slurry. The slurry would be released from the pipe and flow slowly from one pass in the pond to another to facilitate settling of sediments. As the settling area fills with sediments and water, the water would be actively pumped (decanted) out of the settling area to maintain freeboard. Once the sediments have adequately settled out, the decant water would be tested and treated, as necessary to meet the effluent limits contained in Provision 2, prior to discharge to Castro Cove. Task 2 of this Order requires submittal of a decant water management plan that addresses treatment, discharge, and monitoring to demonstrate that this effluent does not adversely impact receiving water in Castro Cove.

8. AOC RESTORATION

The project will temporarily impact approximately seven acres of federally protected wetlands and 28 acres of intertidal mudflat defined as jurisdictional by Section 404 of the Clean Water Act. These areas occur in Castro Cove; none are found within the No. 1 Oxidation Pond. Temporary impacts to the wetlands and mudflats in Castro Cove include temporary installation of the sheet pile enclosure and excavating contaminated bay sediment from the 20-acre site.

Natural Accretion in Mudflat Area: Removal of sediments from the AOC would create an artificial depression below the equilibrium level in the Cove, and an accretion rate of two to three inches per year is expected in the southern portion of the Cove. Complete fill of the restoration area by natural accretion is expected to take 10 to 15 years. The

benthic community is expected to begin to reestablish itself immediately after sediment removal. Shoreline erosion will be minimized by placing a 6-inch-thick sand layer over the exposed surface. Experience elsewhere in the Bay has shown that such sand mixes with finer material to form a protective crust.

Revegetation of Salt Marsh Area: The south and west banks of the Cove are partly vegetated and some plants have colonized the area that would be excavated, including approximately 1.5 acres of native cordgrass. It is estimated that an additional one acre of cordgrass and pickleweed could be affected by sheetpile installation and maintenance or other activities associated with the site clean up. Natural recruitment is the preferred route for reestablishing cordgrass in the project area because manual planting usually has a low survival rate. This area has shown rapid colonization by cordgrass in recent years, indicating that when appropriate physical conditions (i.e. substrate elevation and composition and wave energy) are present, natural recruitment is highly likely due to the availability of abundant seeds and propagules.

9. PROJECT BENEFITS

The project would eliminate the potential risk that contaminants in the cove, such as mercury and PAHs, pose to sediment-dwelling organisms. By removing between 140 and 190 pounds of mercury from Bay sediments, the cleanup will support the Water Board's proposed San Francisco Bay Mercury Total Maximum Daily Load (TMDL). Mercury reductions will reduce the amount of mercury available to sediment-dwelling organisms and will benefit aquatic organisms that feed on them, as well as birds and mammals higher in the food web.

9. BASIN PLAN

The Water Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on January 21, 2004. This updated and consolidated plan represents the Water Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 22, 2004, and October 4, 2004, respectively, and approved by the U.S. Environmental Protection Agency, Region IX on January 5, 2005. A summary of regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater.

10. DESIGNATION OF BENEFICIAL USES

The existing and/or potential beneficial uses of Castro Cove and San Pablo Bay as identified in the Basin Plan include:

a. Water Contact Recreation
b. Non-Contact Water Recreation
c. Preservation of Rare and Endangered Species
d. Estuarine Habitat
e. Wildlife Habitat

f. Industrial Service Supply
g. Navigation
h. Commercial and Sport Fishing
i. Fish Migration
j. Shellfish Harvesting
k. Fish Spawning

11. STATE BOARD RESOLUTION NO. 92-49

State Water Resources Control Board Resolution No. 92-49, entitled "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304," acknowledges that attainment of background levels of water quality cannot reasonably be achieved in all cases. In approving any alternative cleanup levels less stringent than background, any such alternative cleanup level must be consistent with maximum benefit to the people of the State; not unreasonably affect present and anticipated beneficial use of such water; and not result in water quality less than that prescribed in the Water Quality Control Plan and Policies adopted by the State and Regional Water Board. This Order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

12. STATE BOARD RESOLUTION NO. 68-16

On October 28, 1968, the State Board adopted Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California." This policy applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality reasonable, if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. This Order and its requirements are consistent with Resolution No. 68-16.

12. WETLAND TRACKER SYSTEM: It has been determined through regional, state, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's No Net Loss Policy for wetlands, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, we require that the Applicant (or Discharger) use a standard form to provide Project information related to impacts and mitigation/restoration measures. An electronic copy of the form and instructions can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.htm. Project information concerning impacts and mitigation/restoration will be made available at the web link: http://www.wetlandtracker.org.

13. COST RECOVERY: Pursuant to California Water Code Section 13304, Chevron Products Company is hereby notified that the Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order.

14. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) COMPLIANCE: The Water Board, as lead agency for this project, has prepared a Mitigated Negative Declaration (MND), which has been circulated for public review in compliance with CEQA and applicable regulations. The Water Board has considered the MND, which reflects the independent judgment and analysis of the Water Board, and finds based on substantial evidence in the record that all environmental impacts have been identified and will be mitigated to a level of insignificance pursuant to compliance with the Mitigation Monitoring and Reporting Program contained in the MND and the conditions of this Order. On MONTH XX, 2006, the Water Board adopted the MND. The MND, all supporting documentation and record are available at the Water Board's office.

15. NOTIFICATION AND PUBLIC PARTICIPATION: The Water Board notified Chevron Products Company and interested agencies and persons of its intent under California Water Code Sections 13304 and 13263 to prescribe site cleanup requirements for the discharge and provided an opportunity for a public hearing and an opportunity to submit written comments.

16. **PUBLIC HEARING:** The Water Board, at a public meeting, heard and considered all evidence and comments pertaining to this discharge and the proposed corrective action.

17. **PETITION FOR REVIEW:** Any person affected by this action of the Water Board may petition the State Water Resources Control Board to review the action in accordance with Section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The petition must be received by the State Water Resources Control Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request. If you choose to petition the Order, be advised that you must comply with the Order while your appeal is being considered.

IT IS HEREBY ORDERED, pursuant to Sections 13304 and 13263 of the California Water Code, that Chevron Products Company (or its agents, successors, or assigns) shall cleanup and abate the effects of waste discharged as described in the above findings, as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner that will significantly degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. The discharge of floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters, or otherwise adversely impact beneficial uses is prohibited.

3. The storage, handling, treatment or disposal of contaminated soil or sediments in a manner creating a nuisance, as defined in Section 13050(m) of the California Water Code, is prohibited.

4. The groundwater in the vicinity of the Project shall not be degraded as a result of the placement of fill for the Project.

B. TASKS

Chevron Products Company shall comply with the following tasks.

Task 1: Submit Final Corrective Action Plan

Due Date: At least 60 days prior to the start of mobilization for corrective action but no later than December 31, 2006

Description: A detailed summary of the proposed final Corrective Action shall be submitted for Executive Officer review and concurrence. At a minimum, the plan shall include:

- the final design of the temporary sheetpile enclosure;
- sheetpile installation and removal procedures;
- dredging, transport, and placement procedures to ensure that targeted sediment in the AOC is delivered No. 1 Oxidation Pond Passes 2 through 5;
- capping and final closure design details for No. 1 Oxidation Pond Passes 2 through 5; and,
- design and installation details for the engineered cap proposed for the 1.5 acres of salt marsh in the southwest corner of the AOC that will be excavated to a depth of three feet .

This plan shall be consistent with the project description contained in the MND adopted by the Water Board in accordance with CEQA.

Task 2: Submit Decant Water Management Plan

Due Date: At least 60 days prior to start-up of dredging

Description: A management plan that proposes decant water handling, treatment, and discharge procedures designed to meet the effluent limits contained in Provision 2 of this Order shall be submitted for review and approval by the Executive Officer. In addition, a self-monitoring program shall be proposed to demonstrate that this effluent does not adversely impact receiving water in Castro Cove.

Task 3: Submit Monitoring and Risk Management Plan

Due Date: At least 60 days prior to completion of the Corrective Action

Description: A cleanup success monitoring plan shall be submitted for Executive Officer review and concurrence. The plan shall propose: 1) post-dredging confirmation monitoring to demonstrate that chemical contamination in sediments in the AOC has been reduced to levels that no longer pose unacceptable ecological risk; 2) a long-term sediment elevation monitoring program to ensure that the AOC is not subject to localized erosion and that natural accretion is restoring the Cove bottom to pre-dredging elevations; and, 3) a contingency plan in case monitoring data indicate natural accretion is

significantly less than the predicted rate indicated in the approved final Corrective Action Plan.

Task 4: Submit Final Mitigation and Monitoring Plan

Due Date: At least 60 days prior to completion of the Corrective Action

Description: A final Mitigation and Monitoring Plan, consistent with the measures for restoring salt marsh and intertidal mudflat areas proposed in the Mitigation Monitoring and Reporting Program of the MND, shall be submitted for Executive Officer review and concurrence. If the monitoring program indicates that establishment of the restoration habitat is not progressing in a manner or rate consistent with that of the proposed success criteria, the mitigation monitoring reports shall evaluate the probable cause(s) of any problems and propose appropriate corrective measures. Proposed changes in the Mitigation and Monitoring Plan success criteria or timelines must be approved in writing by the Executive Officer.

Task 5: Submit Corrective Action Completion Report

Due Date: Within 3 months of completion of Corrective Action

Description: Final report describing corrective action implementation.

Task 6: Submit Mitigation Completion Report

Due Date: Within 3 months of completion of Mitigation

Description: Final report describing how mitigation has achieved the success criteria specified in the final Mitigation and Monitoring Plan concurred with by the Executive Officer. Upon receiving written concurrence with the Mitigation Completion Report, further submittal of mitigation monitoring reports will no longer be required.

C. PROVISIONS

1. **Monitoring Program:** Chevron Products Company shall comply with Monitoring Plan as approved, and as may be amended, by the Executive Officer.

2. **Effluent Limitations for Return Water:** The treatment processes proposed for the return water from excavated sediments must be based on approved bench tests result and must be sufficient to demonstrate that the discharge of treated return water will not adversely affect receiving water quality and its beneficial uses significantly. At a minimum, the return water must meet the following effluent limitations:

   <u>Prior to Discharge to Castro Cove:</u>

Total Suspended Solids (TSS):	30 mg/l	30-day Average
	45 mg/l	7-day Average

Total Mercury	2.1 μg/l	1-hr Average
Total PAHs	15 μg/l	24-hr Averaged
pH:	6.5 - 8.5	
Whole Effluent Acute Toxicity:	Single-sample maximum of at least 70 percent survival of test organism in a 96-hour static test	

In the Receiving Water (outside of a 20 feet radius from the discharge point):

Turbidity:	Less than 10% variation from the background

3. **Lab Qualifications:** All samples shall be analyzed by a State certified laboratory or laboratory accepted by the Water Board using approved EPA methods for the type of analysis to be performed. All laboratories or the consultant shall be required to maintain quality assurance/quality control records for Water Board review.

2. **Good Operation and Maintenance (O&M):** Chevron Products Company shall maintain in good working order, and operate in the normal standard of care, any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Access to Site and Records:** Chevron Products Company shall permit the Water Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

   a. Entry upon Discharger's premises in which any pollution sources exist, or are suspected to exist, or inspection of any required records, which are relevant to this Order.

   b. Access to copy any records required to be kept under the terms or conditions of this Order.

   c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by Chevron Products Company.

4. **Reporting of Changed Owner or Operator:** Chevron Products Company shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.

5. **Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, Chevron Products Company shall report such discharge to the Water Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8:00 to 5:00), and the Office of Emergency Services at (800) 852-7550 during non-office hours.

   A written report shall be filed with the Water Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

   This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

6. **Non-compliance:** If the Executive Officer finds that Chevron Products Company has failed to comply with the provisions of this Order, he/she is authorized to issue an Administrative Civil Liability complaint for Water Board consideration or, after approval of the Water Board Chairperson, to request the Attorney General to take appropriate action against Chevron Products Company, including injunctive and civil remedies, if appropriate.

7. **Cost Recovery:** Chevron Products Company shall be liable, pursuant to Section 13304 of the California Water Code, to the Water Board for all reasonable costs actually incurred by the Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial actions, required by this Order.

11. **Wetland Tracker System:** Chevron Products Company is required to use the standard Wetland Tracker form to provide Project information describing impacts and mitigation/restoration measures within 14 days from the date of this Order. The completed Wetland Tracker form shall be submitted electronically to wetlandtracker@waterboards.ca.gov or shall be submitted as a hard copy to the address on the letterhead (or to the Water Board), to the attention of Wetland Tracker.

12. **Modification of Order:** Chevron Products Company may request an extension of any of the compliance dates specified in the Order, or other modifications or revisions and upon review. Similarly, this Order in no way limits the authority of the Water Board to require additional investigation and cleanup at the facility consistent with the California Water Code. This Order may be revised as additional information becomes available. Revisions may be made by the Executive Officer using authority delegated from the Water Board or may be made by the Water Board upon recommendation by the Executive Officer.

13. **Certification:** The Water Board hereby issues an order certifying that any discharge from the referenced project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent

Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 - DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification. The following conditions are associated with this certification:

a. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the CWC and Section 3867 of Title 23 of the California Code of Regulations (23 CCR).

b. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

c. Certification is conditioned upon total payment of the full fee required in State regulations (23 CCR Section 3833) and owed by the applicant. The fee for this certification has been paid in full.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____, 2006.

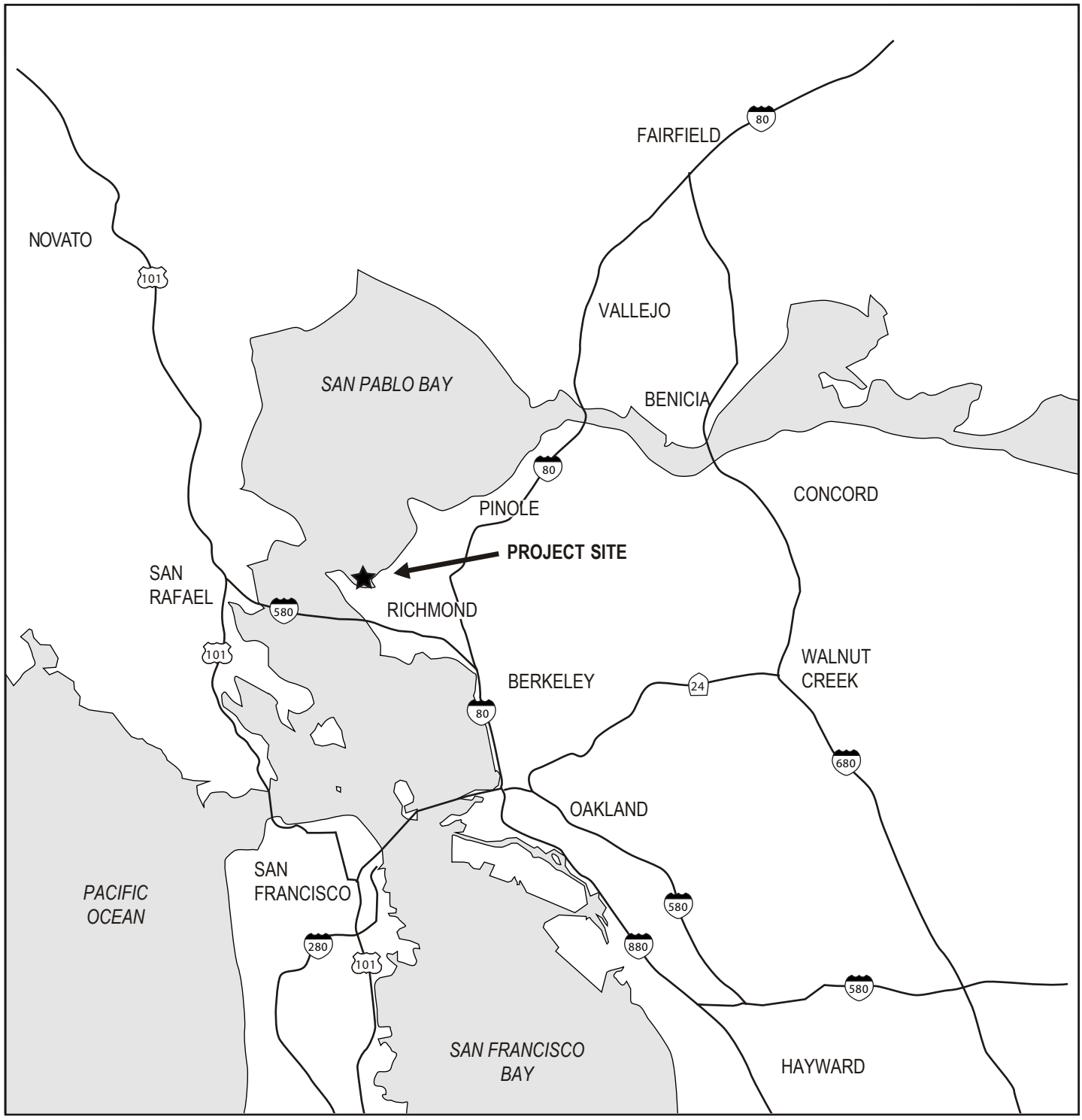
_____
BRUCE H. WOLFE
Executive Officer

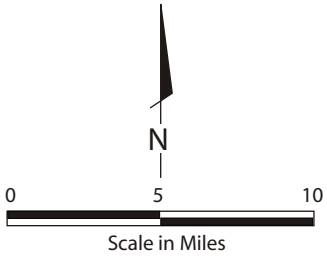
ATTACHMENTS:

Figure 1. Regional Location Map

Figure 2. Site Location Map

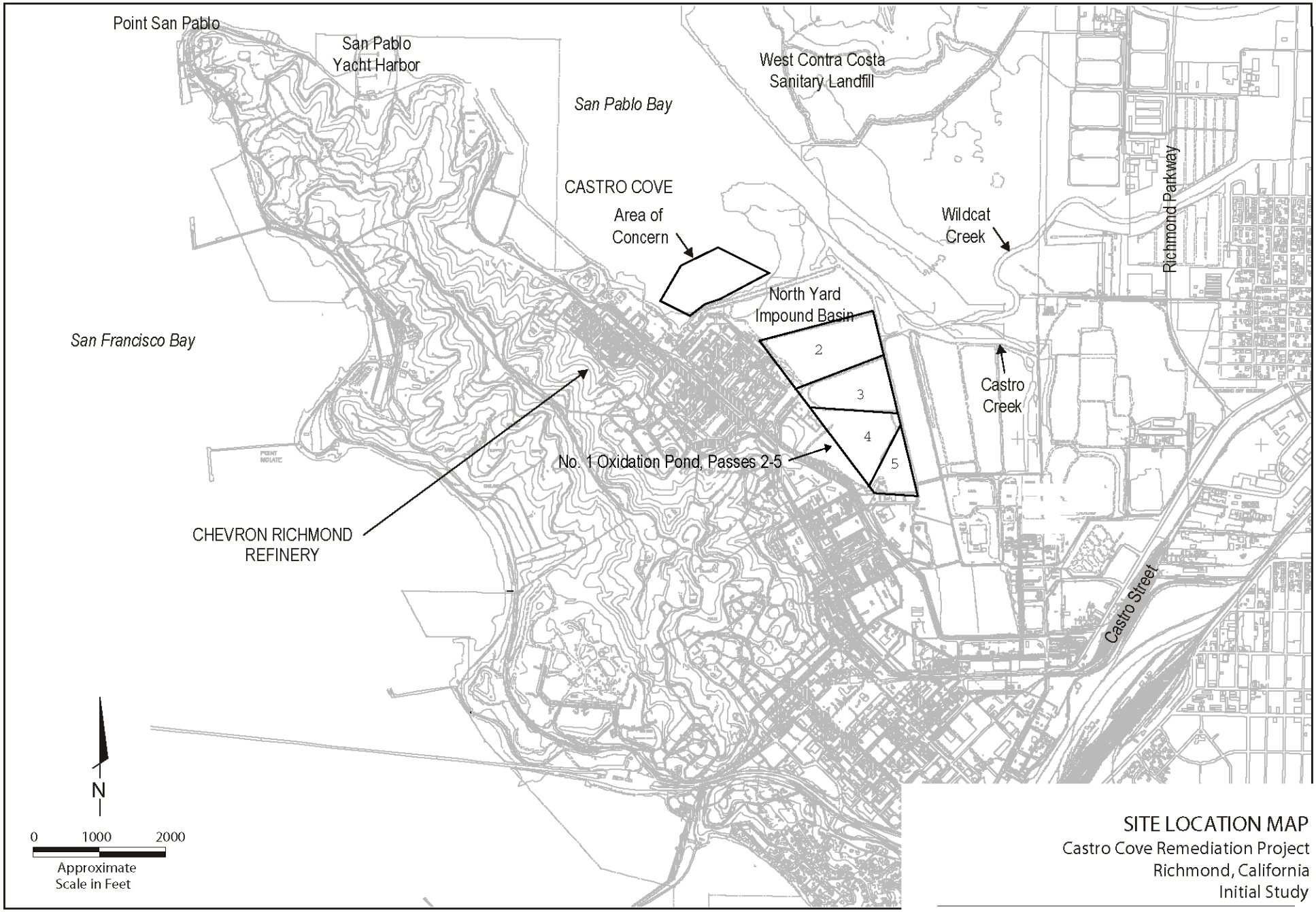
Figure 3. Delineation of Area of Concern and Limit of Excavation





REGIONAL LOCATION MAP
Castro Cove Remediation Project
Richmond, California
Initial Study

Figure 1



SITE LOCATION MAP
Castro Cove Remediation Project
Richmond, California
Initial Study

Figure 2

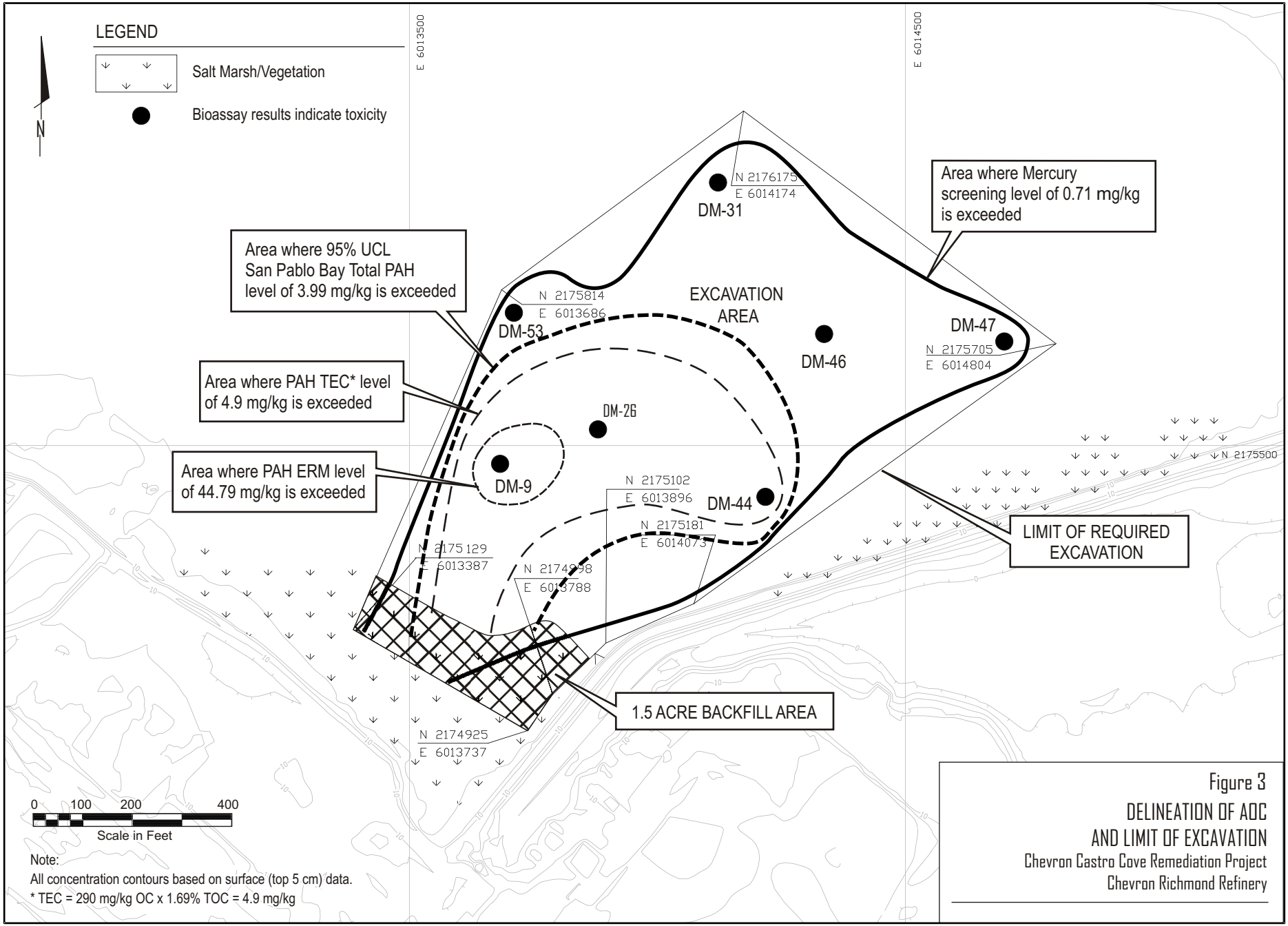


Figure 3
DELINEATION OF AOC
AND LIMIT OF EXCAVATION
Chevron Castro Cove Remediation Project
Chevron Richmond Refinery

9/21/06 vsa ..\Chevron Castro Cove\Graphics\Figure 3 rev 09-15-06.cdr